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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Appl. No. : 09/780,306
Applicant : Daniel Pompei Cedrone
Filed : 02/09/2001
TC/A.U. : 3676
Examiner : Alison K. Pickard
Docket No. : 1246.1
Customer No. : 021176
For : GRAVITY HINGE

Confirmation No: 6764

July 27, 2005

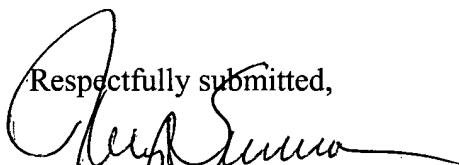
Mail Stop Appeal Brief - Patents
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TRANSMITTAL OF APPEAL BRIEF

(PATENT APPLICATION – 37 C.F.R. § 1.192)

Transmitted herewith is the revised APPEAL BRIEF in this application, with respect to the Notification of Non-Compliant Appeal Brief mailed on June 27, 2005.

Respectfully submitted,



Philip Summa
Reg. No. 31,573

021176

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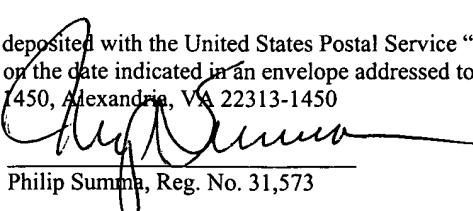
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July 27, 2005


Philip Summa, Reg. No. 31,573

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APPEAL BRIEF

On February 9, 2005, Applicant filed a Notice of Appeal from the Primary Examiner to the Board Of Patent Appeals and Interferences in accordance with 37 C.F.R. § 1.191. The Notice of Appeal was filed in response to the Final Office Action mailed August 10, 2004. In accordance with 37 C.F.R. § 41.37 (a)(1), Applicant timely submits this Appeal Brief.

I. Real Party in Interest

The real party in interest is Poly-Tech Industrial, LLC, a corporation organized under the laws of North Carolina and located in Huntersville, North Carolina ("Poly-Tech"). Poly-Tech is the real party in interest by virtue of an assignment from the inventor to Poly-Tech submitted with the application and now recorded at Reel 011557, Frame 0208.

II. Related Appeals and Interferences

There are currently no related appeals or interferences.

III. Status of Claims

Claims 1-5, 7, and 10-16 are pending and stand rejected. Claims 8-9, 17-28, and 37-39 have been previously cancelled. Applicant has requested the cancellation of claims 33 and 36 in accordance with the Amendment After Final filed under separate cover on July 27,

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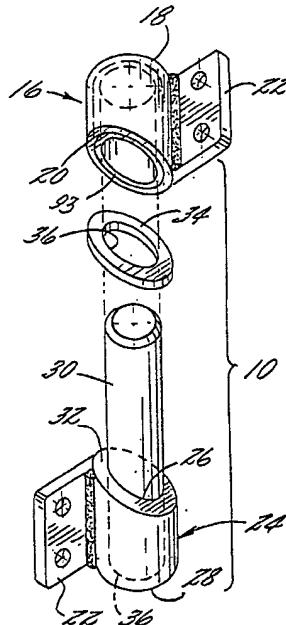
2005. Claims 1-5, 7, and 10-16 are the subject of this appeal. The claims as pending on appeal are attached hereto in the Appendix as Exhibit 1.

IV. Status of Amendments

An Amendment After Final requesting the cancellation of claims 33 and 36 is submitted under separate cover on July 27, 2005.

V. Summary of Claimed Subject Matter

The claimed invention relates to safety gates that close automatically via the action of gravity—known to those skilled in the art has “gravity gates.” The present invention incorporates a cylindrical hinge as shown in Figure 2 of the application and illustrated below:



Application Fig. 2

Known gravity gates typically employ a cylindrical hinge consisting of an upper portion and a lower portion, wherein the upper portion rotates about an oblique junction upon

application of a rotational force. As the upper portion rotates, the two portions separate due to the oblique nature of the junction. Accordingly, the upper portion “rises,” thereby storing potential energy that causes the upper portion to “fall” (*i.e.*, rotate) back to a neutral position when the rotational force is terminated.

A primary problem associated with known gravity gates, and common to all devices that employ moving parts, is friction. In many instances the rotating portions of known hinges are made of metal and are in direct contact with one another, thus leading to friction and premature failure of the hinge. Attempts to solve frictional problems associated with rotating metal portions include the application of an external lubricant such as grease. Unfortunately, grease is messy and transitory, thereby leading to frequent maintenance.

More recent designs of gravity gates incorporate polymers in an attempt to reduce friction and weight of the hinge. Although polymer cams may reduce friction, polymer cams are far more susceptible to torsional failures than metallic cams.

The claimed device eliminates or reduces many of the problems identified above with respect to known gravity gates. Further, devices according to the present invention are efficiently manufactured and demonstrate superior commercial success as compared to other gravity gate devices.

Referring to the numerically identified elements appearing in Figure 2 of the application and illustrated above, the gravity hinge of the present application includes an upper cylindrical knuckle (16) (Specification, p.4, lines 11-26), a lower cylindrical knuckle (24) (Specification, p.5, lines 10-19), an oblique polymeric bushing (34) (Specification, p.6, lines 21-26) positioned between the upper and lower cylindrical knuckles, and a spindle (30) (Specification, p.5, lines 20-24) received by the bushing (34) and at least one of the knuckles.

The upper and lower knuckles (16, 24) each include a first terminating surface (18 and 26, respectively) and an opposing second terminating surface (20 and 28, respectively) (Specification, p.4, lines 15-20, and p.5, lines 10-17, respectively). The second terminating

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surface (20) of the upper knuckle (16) is oblique to the axis of the upper knuckle (Specification, p.4, lines 19-20). The first terminating surface (26) of the lower knuckle (24) is oblique to the axis of the lower knuckle (Specification, p.5, lines 10-12). Preferably, the oblique angle of the first terminating surface (26) of the lower knuckle (24) is approximately the same as the second terminating surface (20) of the upper knuckle (16) (Specification, p.5, lines 12-14).

The spindle (30) is received by at least one of the knuckles and establishes rotating communication between the upper and lower knuckles (16, 24) (Specification, p.5, lines 20-21). The upper and lower knuckles (16, 24) are situated such that the second terminating surface (20) of the upper knuckle (16) is opposed to the first terminating surface (26) of the lower knuckle (24) (Specification, p.5, lines 21-23).

The polymeric bushing (34) surrounds the spindle (30) and separates the upper and lower knuckles (16, 24). Advantageously, the polymeric bushing (34) has a lower coefficient of friction with respect to the oblique surfaces (20, 26) of the upper and lower knuckles (16, 24) than the respective surfaces have for each other (Specification, p.6, lines 21-30).

VI. Grounds of Rejection to be Reviewed on Appeal

Claims 1-5, 7, 10, 11, 15, and 16 stand rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 4,697,306 to Rhodes in view of U.S. Patent No. 3,733,650 to Douglas.

Claims 12-14 stand rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 4,697,306 to Rhodes in view of U.S. Patent No. 3,733,650 to Douglas, and further in view of U.S. Patent No. 4,864,691 to Gidseg.

VII. Argument

A. Rejection under 35 U.S.C. 103(a) over U.S. Patent No. 4,697,306 to Rhodes in view of U.S. Patent No. 3,733,650 to Douglas

1. Claims 1-5, 7, 10, 11, 15, 16

(a.) The Office has Failed to Establish a Prima Facie Case of Obviousness with respect to Rhodes and Douglas

Applicant respectfully submits that the combination cited by the Office fails to satisfy the requirements for a *prima facie* case of obviousness under *Graham v. John Deere*, 383 U.S. 1, 148 USPQ 459 (1966) and its progeny. Obviousness cannot be established by combining pieces of prior art absent some teaching, suggestion, or incentive supporting the combination. *In re Geiger*, 815 F.2d 686, 688, 1 USPQ2d 1276, 1278 (Fed. Cir. 1987) (reversing the finding of obviousness because the standard for obviousness was not met where the application was based on a specific combination of existing techniques where many possible combinations existed).

Applicant asserts that there exists no suggestion or motivation to combine the cited references in the manner described by the Office. Specifically, Douglas teaches away from the claimed invention.

(b) Douglas Provides No Motivation for Making the Substitution Suggested by the Examiner and in Fact Teaches Away from Gravity Hinges

Douglas teaches away from the use of lift-off (*i.e.*, gravity) hinges. Specifically, as described herein, Douglas emphasizes several disadvantages of lift-off or “rising and falling” hinges. According to Douglas, the disadvantages of such hinges can be avoided by using the structure that he discloses and claims; namely, the cam member or insert (12) with the oblique surface (15) as depicted in Figure 1 of the Douglas patent illustrated below:

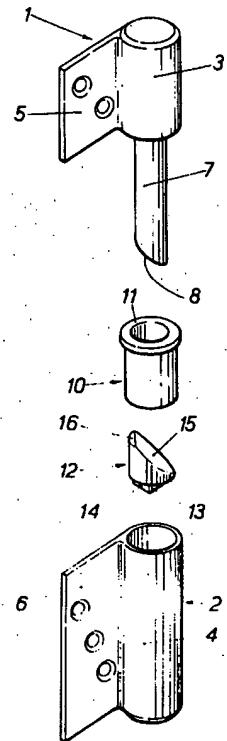


Fig. 1 of U.S. Patent No. 3,733,650 to Douglas

As illustrated above, the adjacent end faces of the upper and lower barrel members (1, 2) of Douglas are intentionally parallel—in contrast to the chamfered and inclined end faces or terminating surfaces (20, 26) of the upper and lower knuckles (16, 24) of the claimed invention (*see Fig. 1 of the Douglas patent*). Applicant first argued this deficiency with respect to the Douglas reference during the Office Interview of July 16, 2003.

As discussed at the interview, because Douglas seeks to preserve barrel members with parallel faces, Douglas teaches away from the claimed invention and thus cannot be properly brought to bear in a combination. Therefore, the combination of Rhodes in view of Douglas must be removed as against the pending claims. Applicant calls the Office's attention to

column 1, lines 13-31 of the Douglas patent, which teaches that hinges with chamfered and inclined edges are disadvantageous and should be avoided.

Specifically, Douglas identifies the disadvantages of rising and falling lift-off hinges, namely, the duplication of production tools required to manufacture both the lift-off hinges and the parallel movement hinges (Douglas, column 1, lines 18-22). This duplication, Douglas asserts, necessarily leads to increased tooling costs, increased manufacturing costs, increased initial expenditure by retailers, and increased requirement for storage space (Douglas, column 1, lines 22-26).

Finally, Douglas affirms the following object of his invention:

...to overcome, or minimize, the foregoing disadvantages by enabling a lift-off hinge to be converted quickly and easily from a rising and falling hinge to a parallel movement hinge and vice versa.

Douglas, column 1, lines 27-31 (emphasis added).

Stated differently, an object of Douglas's invention is to overcome the stated disadvantages of lift-off hinges by using the structure he discloses and claims; namely, a single insert (12) with an oblique surface (15) (*see Fig. 1 of the Douglas patent*). In contrast, the claimed invention discloses and claims two opposing knuckles (16, 24) having chamfered and inclined terminating surfaces (20, 26).

Thus, Douglas's goal is to produce a hinge that avoids such inclined knuckles. Accordingly, given that Douglas teaches away from the use of the inclined knuckles that are recited in Claim 1 of the present application, the person of ordinary skill in the art would not logically choose Douglas to combine with Rhodes.

When Douglas is properly considered as teaching the disadvantages of lift-off hinges, Douglas no longer remains a valid reference that can be favorably combined with lift-off hinges because Douglas explicitly teaches the person of ordinary skill in the art to avoid such combinations (*i.e.*, inclined knuckles and lift-off hinges).

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In summary, a prior art reference must be considered in its entirety, *i.e.*, as a whole, including portions that would lead away from the claimed invention. *W.L. Gore & Assoc., Inc. v. Garlock, Inc.*, 721 F. 2d 1540, 220 USPQ 303 (Fed. Cir. 1983) *cert. denied*, 469 U.S. 851 (1984). Applicant must again insist upon applying the well-understood maxim that if the Office wishes to appeal to the teachings of a reference, the reference and its teachings must be evaluated in their entirety, and the Office is not entitled to selectively choose those portions of the reference that favors the Office's position while ignoring those portions of the reference that teach away from the Office's position.

Therefore, the Office's use of Douglas in any combination with a lift-off structure is inconsistent with Douglas itself and such combinations must collapse under Douglas's own teaching.

(c) Other Indicia of Nonobviousness

Although not the exclusive arbiter of non-obviousness, evidence of commercial success is a proper factor to be considered by the Office. To that end, Applicant has submitted on April 30, 2004, a Declaration under Rule 132 (37 C.F.R. § 1.132) from named inventor Daniel P. Cedrone setting forth evidence of the commercial success of the claimed invention (*see Appendix, Exhibit 2*).

Although Mr. Cedrone is the named inventor and certainly has an interest in obtaining patent protection, he also brings 23 years of experience to this market and is the principal (President) of Poly-Tech Industrial, LLC. Furthermore, Poly-Tech remains the sole supplier of the invention to date. Accordingly, Applicant submits that Mr. Cedrone's declaration provides an appropriate evaluation of the commercial success of the invention regardless of his status as named inventor.

As set forth in Mr. Cedrone's declaration, since 2000, the claimed invention has created a market worth hundreds of thousands of dollars per year. Applicant respectfully

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points out that within nine months of its introduction, over 800 of the hinges had been sold at a price point of about \$150 per hinge.

This commercial success is an objective indication of the non-obviousness of the claimed invention. As stated by the Federal Circuit, “the commercial response to an invention is significant to determinations of obviousness, and is entitled to fair weight.” *Demaco Corp. v. F. Von Langsdorff Licensing, Ltd.*, 851 F.2d 1387, 1391, 859 U.S.P.Q.2d 1222 (Fed. Cir. 1988) (citing *Graham v. John Deere Co.*, 383 U.S. 1, 35-36, 148 USPQ 459, 474, 86 S. Ct. 684 (1966)). In *Demaco*, the Federal Circuit reversed the district court’s finding that certain claims in U.S. Patent No. 4,128,357 were invalid for obviousness under 35 U.S.C. § 103. In analyzing the evidentiary burden on the patentee to demonstrate commercial success, the Court stated:

A patentee is not required to prove as part of its *prima facie* case that the commercial success of the patented invention is *not* due to factors other than the patented invention. It is sufficient to show that the commercial success was of the patented invention itself.

Demaco, 851 F.2d at 1394.

In this case, the commercial success demonstrated above resulted from the unique and non-obviousness nature of the claimed invention.

As further evidence of commercial success, the self-closing gate and hinge of the present invention has now been included in the McMaster-Carr catalog (www.mcmaster.com) which is a premier source of mechanical equipment in the United States and global markets. With respect to the Applicant, McMaster is an unrelated third party that is free of any obligation to carry Applicant’s invention. Thus, the decision to do so is McMaster’s rather than Applicant’s. Stated differently, the acceptance of the claimed invention in the McMaster catalog is an objective indication of its success on the part of a party (McMaster) that has no particular interest in the patentability of the invention.

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B. Rejection under 35 U.S.C. 103(a) over U.S. Patent No. 4,697,306 to Rhodes in view of U.S. Patent No. 3,733,650 to Douglas, and further in view of U.S. Patent No. 4,864,691 to Gidseg.

1. Claims 12, 13, and 14

(a) The Office has Again Failed to Establish a Prima Facie Case of Obviousness with respect to Rhodes, Douglas, and Gidseg

The Office has improperly combined Rhodes and Davis in rejecting claims 1-5, 7, 10, 11, 15, 16, 33, and 36, and further asserts this improper combination in view of U.S. Patent No. 4,864,691 to Gidseg in rejecting claims 12, 13, and 14. Again, Douglas teaches away from the use of gravity hinges, and specifically emphasizes that the disadvantages of such hinges can be avoided by using the cam member or insert (12) with the oblique surface (15) as claimed in his patent (*see* Fig. 1 of the Douglas patent).

Applicant reiterates that this combination fails to satisfy the requirements for a *prima facie* case of obviousness under *Graham v. John Deere*, 383 U.S. 1, 148 USPQ 459 (1966) and its progeny. The prior art pieced together by the Office (*i.e.*, Rhodes, Douglas, and now Gidseg) fail to teach or suggest the current combination claimed by the Applicant in the pending application.

(b) Douglas Teaches Away from Gravity Hinges

The adjacent end faces of the upper and lower barrel members (1, 2) of Douglas are intentionally parallel. In contrast, the end faces or terminating surfaces (20, 26) of the upper and lower knuckles (16, 24) of the claimed invention are chamfered and inclined (*see* Fig. 1 of the Douglas patent). The Douglas patent teaches that hinges with chamfered and inclined edges should be avoided because such edges require duplication of production tools to manufacture both the lift-off hinges and the parallel movement hinges, thus leading to,

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among others, increased tooling costs, increased manufacturing costs, and increased requirement for storage space (Douglas, column 1, lines 18-26).

Applicant asserts that Douglas's goal is to produce a hinge that avoids inclined knuckles. Provided that Douglas teaches away from the use of the inclined knuckles recited in Claim 1 of the present application, the person of ordinary skill in the art would not logically choose Douglas to combine with Rhodes or Gidseg. Because Douglas seeks to preserve barrel members with parallel faces, Douglas teaches away from the claimed invention and thus cannot be properly brought to bear in combination with Rhodes or Gidseg. Therefore, the combination of Rhodes in view of Douglas, and further in view of Gidseg must be removed as against the pending claims.

The Office may not selectively choose those portions of a reference that favor the Office's position while ignoring those portions that teach away from the Office's position. Therefore, Applicant reasserts that the Office's use of Douglas in any combination with a lift-off structure is inconsistent with Douglas itself, and these combinations collapse under Douglas's own teaching.

(c) Conclusion

No motivation exists to combine the references in the manner suggested by the Office. In fact, the Douglas reference specifically teaches away from the claimed invention (*i.e.*, gravity hinges with inclined edges). Thus, the Office has failed to establish a *prima facie* case for obviousness and the rejection must be overturned.

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VIII. Claims Appendix

A copy of the claims involved on appeal is provided in the Appendix at Exhibit 1.

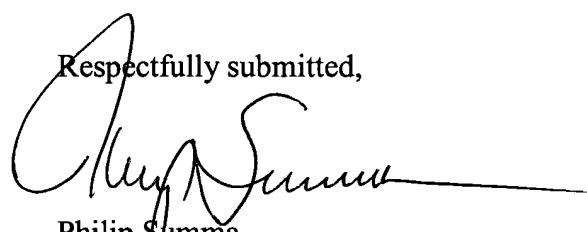
IX. Evidence Appendix

A copy of evidence submitted pursuant to 37 CFR § 1.132 is provided in the Appendix at Exhibit 2. Specifically, Applicant submits a copy of the Declaration submitted on April 30, 2004, under Rule 132 (37 C.F.R. § 1.132) from named inventor Daniel P. Cedrone setting forth evidence of the commercial success of the claimed invention. The Declaration was entered in the record by the Examiner in the Office Action dated August 10, 2004, at page 5, paragraph 5.

X. Related Proceedings Appendix

There are presently no related proceedings, therefore, an Appendix setting forth any related proceedings is not provided.

Respectfully submitted,


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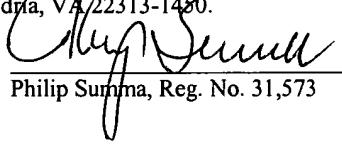


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July 27, 2005


Philip Summa, Reg. No. 31,573

APPENDIX


Claims Appendix

1. A low friction gravity hinge consisting essentially of:
an upper cylindrical knuckle having a first terminating surface and an opposing second terminating surface, said second terminating surface being oblique to the axis of said upper knuckle across its entire surface;

a lower cylindrical knuckle having a first terminating surface and an opposing second terminating surface

said first terminating surface of said lower cylindrical knuckle being oblique to the axis of said lower knuckle and at the same angle across its entire oblique surface as said second surface of said upper knuckle;

an oblique polymeric bushing between said upper and lower knuckles, said bushing having substantially the same oblique angle as said second terminating surface of said upper knuckle and said first terminating surface of said lower knuckle;

a spindle received by at least one of said knuckles and said bushing for establishing rotating communication between said upper and lower knuckles;

said polymeric bushing having a lower coefficient of friction with respect to said respective oblique surfaces of said upper and lower knuckles than said respective surfaces have for each other and wherein said bushing and said knuckles form a continuous cylinder when said knuckles are in a resting position; and

a cylindrical polymeric sleeve within said upper knuckle between said knuckle and said spindle for reducing rotational friction therebetween.

2. A gravity hinge according to claim 1 wherein said upper cylindrical knuckle is tubular and said spindle extends from said first terminating surface of said lower cylindrical knuckle and is received in said upper tubular knuckle.

3. A gravity hinge according to claim 2 wherein said spindle is integral to said lower cylindrical knuckle.

4. A gravity hinge according to claim 2 wherein said lower cylindrical knuckle has a recess for receiving said spindle.
5. A gravity hinge according to claim 1 wherein said lower cylindrical knuckle is tubular and said spindle extends from said second terminating surface of said upper knuckle and is received in said lower tubular knuckle.
7. A gravity hinge according to claim 5 wherein said upper knuckle is tubular and said spindle traverses the length of said upper knuckle and is received in said lower tubular knuckle.
10. A gravity hinge according to claim 1 wherein said bushing and said sleeve form an integral unit.
11. A gravity hinge according to claim 10 in which at least one of said cylindrical knuckles possesses an opening sufficient to receive both said spindle and said sleeve.
12. A gravity hinge according to claim 1 wherein at least one of said knuckles is metallic.
13. A gravity hinge according to claim 1 wherein at least one of said knuckles is ceramic.
14. A gravity hinge according to claim 1 wherein at least one of said knuckles is formed of a polymer.
15. A gravity hinge according to claim 1 further comprising a mounting flange attached to at least one of said knuckles.
16. A gravity gate comprising the gravity hinge according to claim 1.

Attorney Docket No. 1246.1
Confirmation No. 6764



PATENT

UNITED STATES PATENT AND TRADEMARK OFFICE

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Serial No. 09/780,306
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For: GRAVITY HINGE

Group Art Unit: 3676
Examiner: Alison K. Pickard

Declaration Under 37 C.F.R. § 1.132

Daniel Pompei Cedrone states as follows:

1. I am the named inventor and applicant on the above application.
2. I reside at 17016 Knoxwood Dr., Huntersville, NC 28078.
3. I am the founder and President of Poly-Tech Industrial, Inc. ("Poly-Tech") having a place of business 13420 Reese Boulevard West, Huntersville, North Carolina 28078.
4. Poly-Tech is an industrial plastics distributor that manufactures custom components that solve particular industrial problems. A number of our products and services can be viewed at the following web sites: polytechindustrial.com, gravigate.com and hangwhere.com.
5. My formal education includes two years studying civil engineering at Merrimack College in North Andover Massachusetts. I have also studied plastics engineering and mechanical engineering for two years at the University of Massachusetts at Lowell.
6. I have approximately 23 years of working experience in the field of industrial engineering. I began by working in a family business at age 15 that carries out the same general type of business as Poly-Tech.
7. I am a member of the American Society of Manufacturing Engineers (ASME) and of the Society of Plastics Engineers (SPE).
8. I travel and give seminars on high performance plastics and plastics engineering, and I have particular expertise in the area of plane bearings and their design.

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9. Some of my representative clients and customers, including seminar clients, include The U.S. Navy, Purina, Exxon Mobil, Baxter Healthcare, and The Timken Company.

10. I invented the gravity hinge described in the application (which we refer to as the GRAVIGATE®). The goal was to provide a springless, self-closing, and in most cases one-way, hinge that would in turn support and define self-closing, one-way gates, particularly safety gates that help protect workers on elevated structures by (1) preventing a gate from opening in an undesired direction and (2) closing the gate automatically, simply, reliably, and securely.

11. Since it's commercial introduction, yearly sales of the hinge, and of self-closing gates incorporating the hinge, have grown to approximately 1000 hinges per year representing approximately \$350,000 at our price, and approaching \$500,000 at retail.

12. The hinge and gate has found numerous other applications, some of which were frankly unexpected on my part.

13. Basically, the invention replaces various spring-closing mechanisms for gates or doors that should (or must) automatically return to a closed position. The nature and design of the gravity hinge of the invention is such that it can last approximately 10 years in service as opposed to the approximately three years that can be expected from a spring mechanism that carries out the same tasks.

14. The hinge of the invention is now used in applications that include ladder way guards, floor opening protection, stairway guards, mezzanine walkway guards, roof ladder guards, tower walkway guards, tower ladder way guards, one way personnel gates, gantry entrances and exit guards, equestrian and livestock gateways, large equipment ladder guards, and dangerous equipment guards.

15. These applications serve industries that include railroads, paper and pulp, marine, food processing, mining equipment, water treatment, off road equipment, farming, amusement parks, chemical, timber handling, steel handling, and nuclear, fossil and hydro power.

16. The gravity hinge has been accepted in the McMaster-Carr catalogue (www.mcmaster.com), which is an authoritative and globally distributed industrial sales

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catalogue. McMaster's adoption of the hinge of the invention represents an objective third-party recognition of the value of the invention because its placement there is a decision of the catalogue rather than myself or of our company.

17. As indicated on page 1744 of the McMaster catalog, our hinges, when combined with a fiberglass frame, create a safety gate without springs that retails for prices ranging from between about \$338 and \$398.

18. Our representative sales of the invention are indicated in the attached exhibits.

19. Exhibit 1 represents our sales beginning in March of 2000 through June of 2002 at an average retail price of about \$150 per hinge.

20. Exhibit 2 represents our sales from June 2002 through March 15, 2004.

21. Accordingly, in addition to having significant value in its own right as a self-closing hinge, the invention has created a direct market in self closing safety gates that incorporate the hinge according to the invention and that also bring considerable added value to our customers, to our customers' customers, and to end users.

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under 18 U.S.C. 1001 and that such willful false statements may jeopardize the validity of the application or any patent issued hereon.



Daniel P. Cedrone

Date: 4-20-04

EXHIBIT 1

Customer	Memo	Gate Qty	Hinge Qty	Date	Monthly Hinge Total
Tri*Star Plastics	Composite prototype gate	1	2	03/16/2000	Mar-00
Tri*Star Plastics	Composite Gate	20	40	03/28/2000	42
Tri*Star Plastics	Composite Gate	15	30	04/03/2000	Apr-00
					30
Tri*Star Plastics	Yellow Pultrusion Gate 24" x 32"	1	2	10/06/2000	
Tri*Star Plastics	Yellow Pultrusion Gate 24" x 24"	1	2	10/12/2000	
Tri*Star Plastics	Yellow Pultrusion Gate 24" x 32"	20	40	10/13/2000	Oct-00
Tri*Star Plastics	Composite Gate Tank Platform	1	2	10/20/2000	204
Tri*Star Plastics	Yellow Pultrusion Gate	29	58	10/20/2000	
Tri*Star Plastics	Yellow Pultrusion Gate 24" x 24"	50	100	10/30/2000	
Tri*Star Plastics	Yellow Pultrusion Gate 24" x 32"	50	100	11/13/2000	Nov-00
Tri*Star Plastics	Yellow Pultrusion Gate	15	30	11/28/2000	200
Tri*Star Plastics	Yellow Pultrusion Gate	35	70	11/28/2000	
Tri*Star Plastics	Yellow Pultrusion Gate	50	100	12/01/2000	
Tri*Star Plastics	Yellow Pultrusion Gate	50	100	12/11/2000	Dec-00
Tri*Star Plastics	Yellow Pultrusion Gate	50	100	12/15/2000	352
Tri*Star Plastics	Yellow Pultrusion Gate 24" x 24"	24	48	12/21/2000	
Tri*Star Plastics	Yellow Pultrusion Gate 24" x 24"	2	4	12/21/2000	
Tri*Star Plastics	Yellow Pultrusion Gate 24" x 24"	24	48	01/04/2001	Jan-00
Tri*Star Plastics	Sample Gates	1	2	01/17/2001	50
Tri*Star Plastics	Sample - Yellow Pultrusion Gate	2	4	02/20/2001	Feb-
					March 02
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Tri*Star Plastics	Gravigate Safety Gate 24" x 24"	40	80	01/18/2002
McMASTER-CARR	Gravigate Safety Gate 36" Wide X 36"	1	2	04/04/2002
McMASTER-CARR	Gravigate Safety Gate 30" Wide x 30"	3	6	04/10/2002
Tri*Star Plastics	Gravigate Safety Gate 24" x 24"	8	16	04/24/2002
McMASTER-CARR	Gravigate Safety Gate 30" Wide x 30"	1	2	04/25/2002
McMASTER-CARR	Gravigate Safety Gate 30" Wide x 30"	4	8	05/02/2002
McMASTER-CARR	Gravigate Safety Gate 24" x 24"	1	2	05/03/2002
McMASTER-CARR	Gravigate Safety Gate 36" Wide X 36"	1	2	05/10/2002
McMASTER-CARR	Gravigate Safety Gate 33" Wide x 33"	1	2	05/10/2002
Turtle & Hughes	Gravigate Safety Gate 27" Wide x 27"	1	2	05/10/2002
Turtle & Hughes	Gravigate Safety Gate 18" Wide x 18"	1	2	05/10/2002
Tri*Star Plastics	Gravigate Safety Gate 24" x 24"	20	40	05/17/2002
GEF Incorporated	Gravigate Hinge Assembly	0	7	05/21/2002

Total From 03/00-05/02

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EXHIBIT 2						
Customer	Part_Number	Description	Gate Qty	(Hinge Qty)	Date	Monthly Hinge Total
MCMASTER	CR-002000	GRAVI*GATE-24"x24"-RS	1	2	07/01/02	Jul-02
MCMASTER	CR-002000	GRAVI*GATE-24"x24"-RS	1	2	07/09/02	6
MCMASTER	CR-002000	GRAVI*GATE-24"x24"-RS	1	2	07/11/02	
MCMASTER	CR-002680	GRAVI*GATE-36"x36"-RS	1	2	08/07/02	Aug-02
MCMASTER	CR-002630	GRAVI*GATE-18"x18"-RS	1	2	08/16/02	
MCMASTER	CR-002000	GRAVI*GATE-24"x24"-RS	2	4	08/19/02	10
MCMASTER	CR-002000	GRAVI*GATE-24"x24"-RS	1	2	08/29/02	
MCMASTER	CR-002680	GRAVI*GATE-36"x36"-RS	1	2	09/10/02	Sep-02
POLY-TECH	CR-002770	GRAVI-T HINGE ASSY,RS	1	2	09/27/02	4
MCMASTER	CR-002680	GRAVI*GATE-36"x36"-RS	2	4	10/25/02	Oct-02
MCMASTER	CR-002680	GRAVI*GATE-36"x36"-RS	1	2	10/30/02	6
MCMASTER	CR-002650	GRAVI*GATE-27"x27"-RS	3	6	11/01/02	
MCMASTER	CR-002680	GRAVI*GATE-36"x36"-RS	1	2	11/04/02	
POLY-TECH	CR-002770	GRAVI-T HINGE ASSY,RS			11/6/02	

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POLY-TECH	CR-002000	GRAVI*GATE-24"X24"-RS	1	2	1/1/06/02	Nov-02
MCMASTER	CR-002680	GRAVI*GATE-36"X36"-RS	3	6	1/1/07/02	29
MCMASTER	CR-002680	GRAVI*GATE-36"X36"-RS	4	8	1/1/14/02	
MCMASTER	CR-002650	GRAVI*GATE-27"X27"-RS	1	2	1/1/25/02	
MCMASTER	CR-002000	GRAVI*GATE-24"X24"-RS	1	2	1/1/26/02	
Dec-02						
MCMASTER	CR-002000	GRAVI*GATE-24"X24"-RS	2	4	12/05/02	Dec-02
MCMASTER	CR-002630	GRAVI*GATE-18"X18"-RS	1	2	12/30/02	8
MCMASTER	CR-002640	GRAVI*GATE-21"X21"-RS	1	2	12/30/02	
Jan-03						
TRI-STAR	CR-003360	GRAVIGATE-22"X24"-RS	1	2	01/06/03	
MCMASTER	CR-002680	GRAVI*GATE-36"X36"-RS	4	8	01/10/03	
MCMASTER	CR-002680	GRAVI*GATE-36"X36"-RS	1	2	01/22/03	
TRI-STAR	CR-002770	GRAVI-T HINGE ASSY,RS	4	4	1/27/03	
MCMASTER	CR-002630	GRAVI*GATE-18"X18"-RS	2	4	01/24/03	
Feb-03						
MCMASTER	CR-002680	GRAVI*GATE-36"X36"-RS	2	4	02/11/03	
DAETWYLER	CR-002770	GRAVI-T HINGE ASSY,RS			2/12/03	
POLY-TECH	CR-002770	GRAVI-T HINGE ASSY,RS			2/26/03	
MCMASTER	CR-002650	GRAVI*GATE-27"X27"-RS	1	2	02/20/03	
MCMASTER	CR-002650	GRAVI*GATE-27"X27"-RS	2	4	02/24/03	
MCMASTER	CR-002650	GRAVI*GATE-27"X27"-RS	3	3	02/26/03	
MCMASTER	CR-002680	GRAVI*GATE-36"X36"-RS	1	2	02/27/03	
MCMASTER	CR-002640	GRAVI*GATE-21"X21"-RS	1	2	02/28/03	
Mar-03						

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MCMMASTER	CR-002000	GRAVI*GATE-24"x24"-RS	3	6	03/05/03
MCMMASTER	CR-002630	GRAVI*GATE-18"x18"-RS	1	2	03/06/03
MCMMASTER	CR-002630	GRAVI*GATE-18"x18"-RS	1	2	03/10/03
MCMMASTER	CR-002000	GRAVI*GATE-24"x24"-RS	2	4	03/17/03
MCMMASTER	CR-002000	GRAVI*GATE-24"x24"-RS	2	4	03/17/03
MCMMASTER	CR-002640	GRAVI*GATE-21"X21"-RS	1	2	03/19/03
MCMMASTER	CR-002680	GRAVI*GATE-36"X36"-RS	1	2	03/19/03
MCMMASTER	CR-002000	GRAVI*GATE-24"x24"-RS	1	2	03/26/03
MCMMASTER	CR-002000	GRAVI*GATE-24"x24"-RS	1	2	03/26/03
Apr-03					
MCMMASTER	CR-002680	GRAVI*GATE-36"X36"-RS	1	2	04/02/03
MCMMASTER	CR-002640	GRAVI*GATE-21"X21"-RS	1	2	04/11/03
MCMMASTER	CR-002640	GRAVI*GATE-21"X21"-RS	1	2	04/15/03
MCMMASTER	CR-002640	GRAVI*GATE-21"X21"-RS	2	4	04/25/03
MCMMASTER	CR-002680	GRAVI*GATE-36"X36"-RS	1	2	04/30/03
May-03					
FLEXXCON	CR-002770	GRAVI-T HINGE ASSY,RS	1	1	5/21/03
DAETWYLER	CR-002770	GRAVI-T HINGE ASSY,RS	2	2	5/28/03
MCMMASTER	CR-002640	GRAVI*GATE-21"X21"-RS	1	2	05/07/03
MCMMASTER	CR-002000	GRAVI*GATE-24"x24"-RS	1	2	05/09/03
MCMMASTER	CR-002640	GRAVI*GATE-21"X21"-RS	2	4	05/15/03
MEZZANINE	CR-002000	GRAVI*GATE-24"x24"-RS	1	2	05/29/03
Jun-03					
MCMMASTER	CR-002620	GRAVI*GATE 16"x16"-RS	1	2	06/04/03
MCMMASTER	CR-002630	GRAVI*GATE-18"x18"-RS	5	10	06/12/03
MCMMASTER	CR-002000	GRAVI*GATE-24"x24"-RS	2	4	06/13/03

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MCMMASTER	CR-002000	GRAVI*GATE-24"X24"-RS	1	2	06/24/03	26
MCMMASTER	CR-002660	GRAVI*GATE-30"X30"-RS	1	2	06/25/03	
MCMMASTER	CR-002670	GRAVI*GATE-33"X33"-RS	2	4	06/27/03	
MCMMASTER	CR-002650	GRAVI*GATE-27"X27"-RS	1	2	06/30/03	
MCMMASTER	CR-002000	GRAVI*GATE-24"X24"-RS	1	2	07/02/03	Jul-03
MCMMASTER	CR-002000	GRAVI*GATE-24"X24"-RS	1	2	07/10/03	10
MCMMASTER	CR-002630	GRAVI*GATE-18"X18"-RS	1	2	07/29/03	
MCMMASTER	CR-002670	GRAVI*GATE-33"X33"-RS	1	2	07/29/03	
MCMMASTER	CR-002670	GRAVI*GATE-33"X33"-RS	1	2	07/29/03	
MCMMASTER	CR-002640	GRAVI*GATE-21"X21"-RS	3	6	08/01/03	Aug-03
CASALE IND	CR-004720	GRAVI*GATE 21"X 43"-RS	1	2	08/06/03	
MCMMASTER	CR-002630	GRAVI*GATE-18"X18"-RS	8	16	08/20/03	
PUGET	CR-004810-000	GRAVI*GATE SS 24"X 24"-RS	2	4	08/25/03	
MCMMASTER	CR-002650	GRAVI*GATE-27"X27"-RS	3	6	08/26/03	
GEORGIA	CR-002770	GRAVI-T HINGE ASSY,RS			9/3/03	Sep-03
MCMMASTER	CR-002640-000	GRAVI*GATE-21"X21"-RS	1	2	09/03/03	
MCMMASTER	CR-002000-000	GRAVI*GATE-24"X24"-RS	1	2	09/09/03	
MCMMASTER	CR-002630-000	GRAVI*GATE-18"X18"-RS	1	2	09/09/03	
MCMMASTER	CR-002670-000	GRAVI*GATE-33"X33"-RS	1	2	09/09/03	
MCMMASTER	CR-002650-000	GRAVI*GATE-27"X27"-RS	2	4	09/19/03	
CAROPLAST	CR-002680-000	GRAVI*GATE-36"X36"-RS	10	20	09/26/03	
						Oct-03

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Oct-03		Nov-03		Dec-03		Jan-04	
MCMMASTER	CR-002000-000	GRAVI*GATE-24"X24"-RS	1	2	10/01/03	2	01/20/04
MCMMASTER	CR-002640-000	GRAVI*GATE-21"X21"-RS	1	2	10/01/03	2	01/15/04
MCMMASTER	CR-002660-000	GRAVI*GATE-30"X30"-RS	1	2	10/01/03	2	01/28/04
BI-CON	CR-004900-000	GRAVI*GATE-18"X 16.5" RS	5	10	10/02/03	42	
MCMMASTER	CR-002640-000	GRAVI*GATE-21"X21"-RS	1	2	10/08/03		
MCMMASTER	CR-002660-000	GRAVI*GATE-30"X30"-RS	1	2	10/08/03		
MCMMASTER	CR-002000-000	GRAVI*GATE-24"X24"-RS	1	2	10/09/03		
MCMMASTER	CR-002660-000	GRAVI*GATE-30"X30"-RS	2	4	10/16/03		
PUGET	CR-002770	GRAVI-T HINGE ASSY,RS		2	10/20/03		
MCMMASTER	CR-002640-000	GRAVI*GATE-21"X21"-RS	3	6	10/20/03		
PUGET	CR-004810-000	GRAVI*GATE SS 24"X 24"-RS	2	4	10/20/03		
MCMMASTER	CR-002680-000	GRAVI*GATE-36"X36"-RS	1	2	10/24/03		
MCMMASTER	CR-002640-000	GRAVI*GATE-21"X21"-RS	1	2	10/29/03		
		Nov-03		Nov-03		Nov-03	
MCMMASTER	CR-002640-000	GRAVI*GATE-21"X21"-RS	2	4	11/21/03	4	
		Dec-03		Dec-03		Dec-03	
MCMMASTER	CR-002660-000	GRAVI*GATE-30"X30"-RS	2	4	12/01/03		
MCMMASTER	CR-002670	GRAVI*GATE-33"X33"-RS	1	2	12/05/03		
MCMMASTER	CR-002640-000	GRAVI*GATE-21"X21"-RS	1	2	12/11/03		
MCMMASTER	CR-002650	GRAVI*GATE-27"X27"-RS	2	4	12/15/03		
APV	CR-002770	GRAVI-T HINGE ASSY,RS		1	12/29/03		
MCMMASTER	CR-002680	GRAVI*GATE-36"X36"-RS	1	2	12/15/03		

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			Feb-04		
MCMMASTER	CR-002660-000	GRAVI*T GATE-30"X30"-RS	2	4	02/03/04
AUTOMATED	CR-002770	GRAVI-T HINGE ASSY,RS		6	2/5/04
AUTOMATED	CR-002770	GRAVI-T HINGE ASSY,RS		58	2/25/04
AUTOMATED	CR-005060	GRAVI-T HINGE ASSY, LS		64	2/25/04
MCMMASTER	CR-002000-000	GRAVI*T GATE-24"X24"-RS	1	2	02/16/04
MCMMASTER	CR-002680-000	GRAVI*T GATE-36"X36"-RS	1	2	02/18/04
MCMMASTER	CR-002680-000	GRAVI*T GATE-36"X36"-RS	1	2	02/18/04
MCMMASTER	CR-002680-000	GRAVI*T GATE-36"X36"-RS	2	4	02/20/04
MCMMASTER	CR-002680-000	GRAVI*T GATE-36"X36"-RS	1	2	02/25/04
MCMMASTER	CR-002680-000	GRAVI*T GATE-36"X36"-RS	1	2	02/26/04

			Mar-04		
PURINA	CR-002770	GRAVI-T HINGE ASSY,RS	2	3/9/04	
WHIRLPOOL	CR-005060	GRAVI-T HINGE ASSY, LS	2	3/11/04	
WHIRLPOOL	CR-002770	GRAVI-T HINGE ASSY, RS	2	3/11/04	
MCMASTER	CR-002640-000	GRAVI*T GATE-21"X21"-RS	2	03/04/04	
MCMASTER	CR-002000-000	GRAVI*T GATE-24"X24"-RS	1	03/05/04	
MCMASTER	CR-002640-000	GRAVI*T GATE-24"X24"-RS	1	03/05/04	
MCMASTER	CR-002000-000	GRAVI*T GATE-21"X21"-RS	1	03/09/04	
MCMASTER	CR-002660	GRAVI*T GATE-30" x 30"	4	03/15/04	
		Total From 07/02-03/04	175		503